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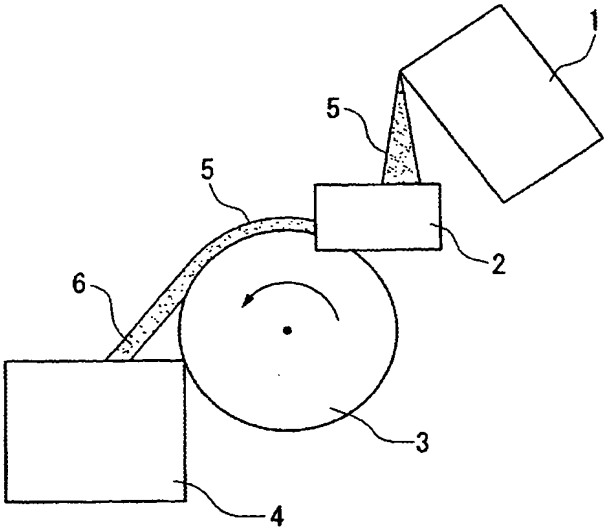
(54) Title: ALLOY CONTAINING RARE EARTH ELEMENT, PRODUCTION METHOD THEREOF, MAGNETOSTRICTIVE DEVICE, AND MAGNETIC REFRIGERANT MATERIAL



(57) Abstract: A method for producing an RE-containing alloy represented by formula $R(T_{1-x}A_x)13_{-y}$ (wherein R represents Ce, etc.; T represents Fe, etc.; and A represents Al, etc; $0.05 \leq x \leq 0.2$; and $-1 \leq y \leq 1$) including a melting step of melting alloy raw materials at 1,200 to 1,800°C; and a solidification step of rapidly quenching the molten metal produced through the above step, to thereby form the first RE-containing alloy, wherein the solidification step is performed at a cooling rate of 10^2 to 10^4°C/second, as measured at least within a range of the temperature of the molten metal to 900°C; and an RE-containing alloy, which is represented by a compositional formula of $R_rT_tA_a$(wherein R and A represent the same meaning as above, T represents Fe, etc.; 5.0 at.% $\leq r \leq$6.8 at.%, 73.8 at.% $\leq t \leq$88.7 at.%, and 4.6 at.% $\leq a \leq$19.4 at.%) and has an alloy microstructure containing an $NaZn_{13}$-type crystal structure in an amount of at least 85 mass% and α-Fe in an amount of 5-15 mass% inclusive.

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